



**Coastal Plains Engineering, P.A.**  
 2805 LUCKLEBAR RD  
 P.O. Box 1117  
 Paramore, NC 28672  
 Phone: 810-821-7213  
 Fax: 810-821-7213  
 www.coastalplainseng.com  
 License No. C-2009

**LEXINGTON PLANTATION POOL HOUSE**  
 HARNETT COUNTY, NC

**ADDITIONAL LEGAL DISCLAIMER**  
 THIS DOCUMENT IS INTENDED TO COMPLY WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA). ARCHITECTS AND ENGINEERS ARE NOT LICENSED TO INTERPRET LAWS OR ORDINANCES CONCERNING LAWS OR LEGAL MATTERS. THE OWNER SHOULD HAVE THIS DOCUMENT REVIEWED BY HIS ATTORNEY TO DETERMINE IF IT COMPLIES WITH ALL OTHER LAWS.

PROJECT NO: 2021-006  
 DRAWN BY: AJO  
 DATE: 08-29-22  
 REVISIONS:

SHEET NO:  
**E1**

CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY FOR SERVICE. A COMPLETE AND WORKING SYSTEM IS REQUIRED FOR COMPLIANCE WITH THESE DOCUMENTS. DETERMINE THE POINT OF CONNECTION TO THE UTILITY WITH THE UTILITY REPRESENTATIVE AND PROVIDE ACCORDINGLY FOR A COMPLETE WORKING SYSTEM.

WIRE AND CABLE SHALL BE INSULATED, TYPE THWN OR THHN, 600 VOLTS, WITH COPPER CONDUCTORS. CONDUCTOR SIZES NO. 8 AWG AND LARGER MAY BE STRANDED. CONDUCTORS SIZES NO. 10 AWG AND SMALLER MAY BE SOLID OR STRANDED. NO ROMEX PERMITTED.

EMT SHALL BE GALVANIZED STEEL TUBING, 1/2-INCH MINIMUM SIZE, EQUAL TO ELECTRUNITE BRAND OR APPROVED AND USED ONLY WITH HEXAGONAL ALL STEEL COMPRESSION FITTINGS.

PLASTIC CONDUIT SHALL BE RIGID, 3/4-INCH MINIMUM NON-METALLIC, HEAVY DUTY, HIGH IMPACT, POLYVINYLCHLORIDE (PVC), TYPE I WILL BE USED FOR CONCRETE ENCASUREMENT, FITTINGS SHALL BE THE SAME MATERIALS AND MANUFACTURER AS THE PLASTIC CONDUIT.

FLEXIBLE METAL CONDUIT SHALL BE 1/2-INCH MINIMUM SINGLE STRIP, STEEL, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE, MAXIMUM LENGTH 72 INCHES FOR LIGHTING AND 36" FOR MOTORS. FLEXIBLE METAL CONDUIT SHALL BE LIQUIDTIGHT OR WATERIGHT WITH PVC JACKET WHERE USED IN DAMP, WET OR OUTSIDE AREAS, AND LIQUIDTIGHT OR WATERIGHT CONNECTORS SHALL BE USED.

NO RECEPTACLES OR TEL. OUTLETS TO BE MOUNTED BACK TO BACK, KEEP AT LEAST 2 INCHES BETWEEN RECEPTACLES AND TEL. OUTLETS.

ALL CONDUCTOR SHALL BE COPPER WITH A MINIMUM SIZE OF #12 AWG EXCEPT FOR FIRE ALARM. THESE CONDUCTORS SHOULD COMPLY WITH NFPA.

CONTRACTOR SHALL ALIGN FIXTURES, SMOKE DETECTORS, CEILING DIFFUSERS ETC. AS REQUIRED TO PROVIDE A UNIFORM PRESENTATION. AT NO TIME WILL AN IONIZATION DETECTOR BE LOCATED WITHIN 3'-0" OF A SUPPLY OR RETURN AIR GRILLE.

CIRCUIT BREAKERS AND WIRE ARE SIZED FOR SPECIFIC EQUIPMENT. BEFORE ORDERING WIRE, BREAKERS AND CONDUIT FOR THIS PROJECT THE CONTRACTOR SHALL COORDINATE WITH THE OTHER CONTRACTORS ON THE JOB AND VERIFY THE ELECTRICAL DATA FOR THE EQUIPMENT WHICH WILL ACTUALLY BE INSTALLED, RECOMPUTING WIRE AND BREAKER SIZES IF REQUIRED BY THE NEC.

ALL CONDUIT TERMINATING IN THE CEILING CAVITIES IS TO BE LABELED.

ALL CONDUIT SHALL BE COLOR CODED WITH 1/2" WIDE TAPE, 10'-0" ON CENTER IN ACCORDANCE WITH STANDARD INDUSTRY PRACTICE.

THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS AND JUNCTION BOXES SHALL BE REVIEWED AND COORDINATED WITH THE ARCHITECT AND OWNER, PRIOR TO INSTALLATION, FOR USE WITH ACTUAL EQUIPMENT.

EACH CONTRACTOR WILL PROVIDE HIS OWN SUPPORT OF ALL DEVICES AND EQUIPMENT PROVIDED BY HIM AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED GOVERNING CODES OR PER APPROVAL OF THE ENGINEER/ARCHITECT UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL BE REPLACED AT THE REQUEST OF THE ENGINEER/ARCHITECT AT THE CONTRACTORS EXPENSE.

THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS.

THE CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THIS PROJECT PRIOR TO THE INSTALLATION OF HIS EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND ALLOW FOR OPTIMUM WORKING SPACE AND MAINTENANCE.

ALL FUSES DISCONNECT SWITCHES AND BREAKER SIZES SHOWN FOR MECHANICAL EQUIPMENT SHALL BE VERIFIED BEFORE PURCHASE AND INSTALLATION OF SAID EQUIPMENT WITH THE EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR.

WHERE EQUIPMENT PENETRATES EXTERIOR WALL OR ROOF THEY SHALL BE PROPERLY SEALED WITH METHODS APPROVED BY THE ARCHITECT/ENGINEER.

ALL WORK IS TO BE DONE IN STRICT COMPLIANCE WITH THE LATEST VERSION OF THE NEC AND APPLICABLE STATE CODES

RECESSED FIXTURES INSTALLED IN RATED ASSEMBLIES SHALL BE INSTALLED WITH AN ENCLOSURE SO AS TO MAINTAIN THE RATING OF ASSEMBLY.

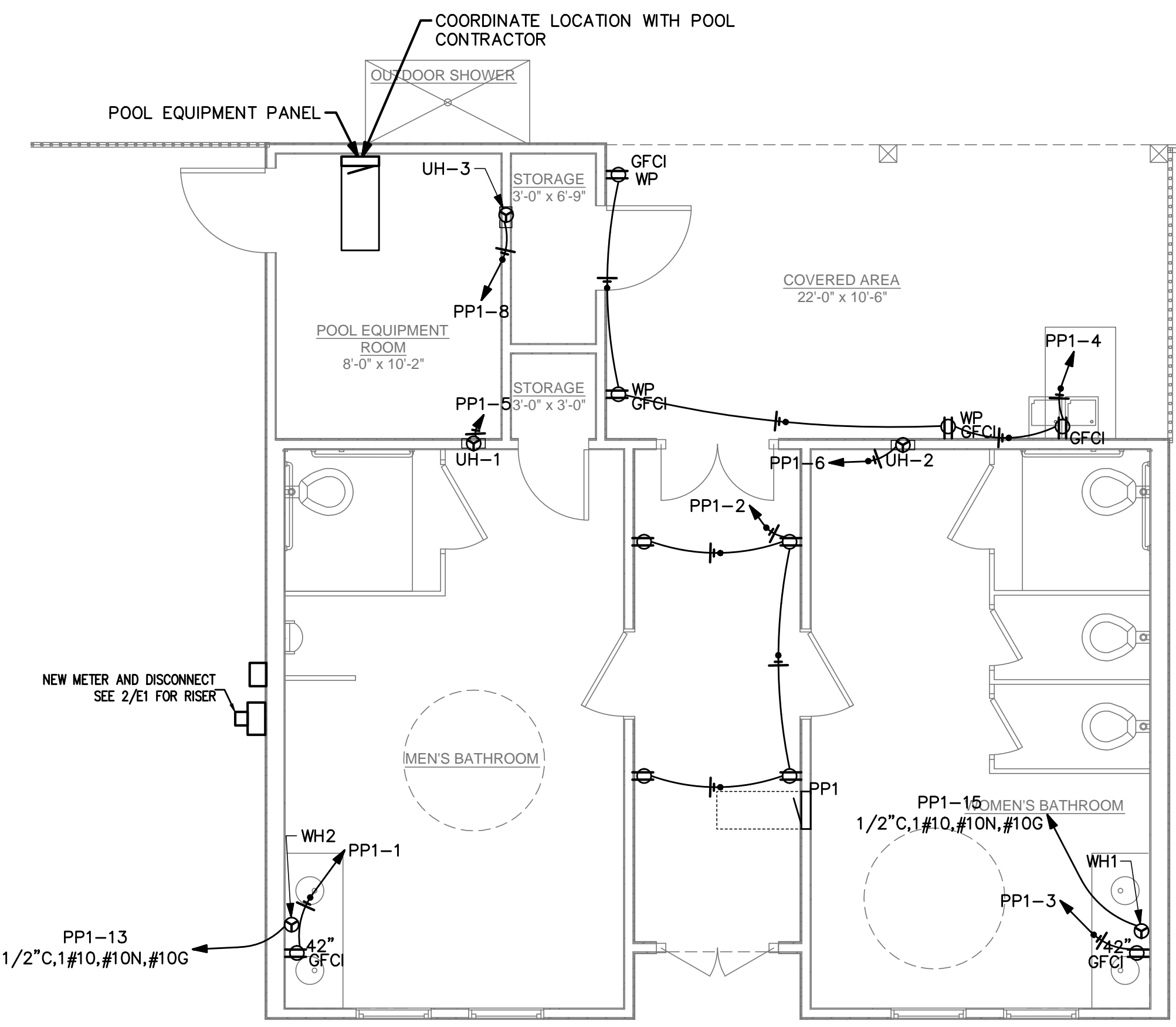
**2 ELECTRICAL NOTES**  
 N.T.S.

**PP1**

ROOM	FLUSH	VOLTS	240/120V 2P 3W	AIC	22,000
MOUNTING	UTILITY	BUS AMPS	200	MAIN BKR	MLO
FED FROM		NEUTRAL	100%	LUGS	STANDARD
NOTE					

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA		CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA	
			A	B				A	B
1	20/1	RECEPTACLE	0.18		2	20/1	RECEPTACLE	0.72	
3	20/1	RECEPTACLE		0.18	4	20/1	RECEPTACLE		0.72
5	20/1	UH-1	1.5		6	20/1	UH-2	1.5	
7	20/1	EF1, LIGHTING		0.359	8	20/1	UH-3		1.5
9	20/1	EF2, LIGHTING	0.431		10	20/1	SPACE	0	
11	20/1	EF3, EF4, LIGHTING		0.13	12	20/1	SPACE	0	
13	30/1	WH2	2.4		14	20/1	SPACE	0	
15	30/1	WH1		2.4	16	20/1	SPACE	0	
17	100/2	PANEL POOL EQUIPMENT PANEL	0		18	20/1	SPACE	0	
19			0		20	20/1	SPACE	0	
21	20/1	SPACE	0		22	20/1	SPACE	0	
23	20/1	SPACE	0		24	20/1	SPACE	0	
25	20/1	SPACE	0		26	20/1	SPACE	0	
27	20/1	SPACE	0		28	20/1	SPACE	0	
29	20/1	SPACE	0		30	20/1	SPACE	0	
31	20/1	SPACE	0		32	20/1	SPACE	0	
33	20/1	SPACE	0		34	20/1	SPACE	0	
35	20/1	SPACE	0		36	20/1	SPACE	0	
37	20/1	SPACE	0		38	20/1	SPACE	0	
39	20/1	SPACE	0		40	20/1	SPACE	0	
41	20/1	SPACE	0		42	20/1	SPACE	0	
			TOTAL CONNECTED KVA BY PHASE				6.73	5.29	

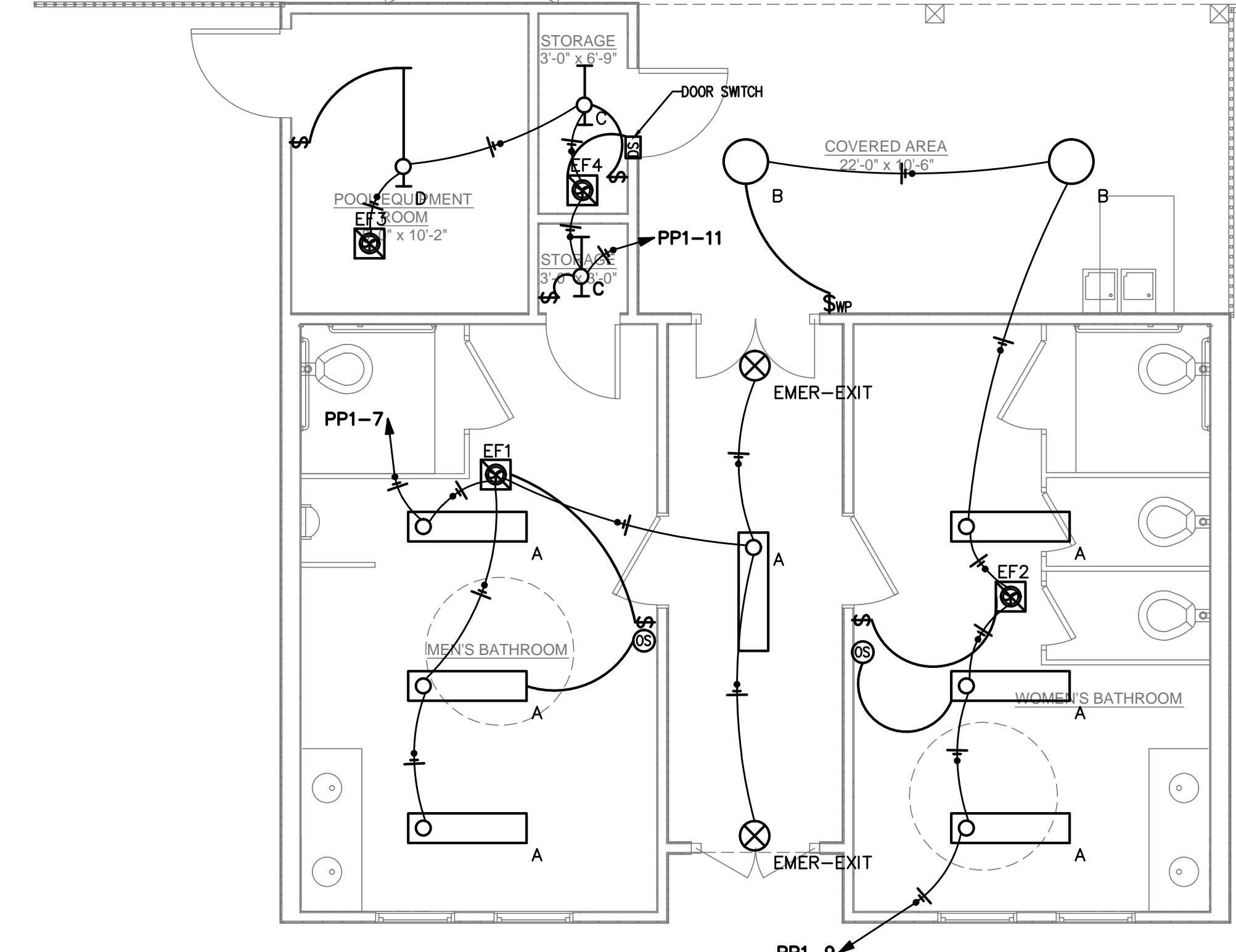
	CONN KVA	CALC KVA		CONN KVA	CALC KVA
LIGHTING	0.479	0.598	(125%)	RECEPTACLES	1.8
LARGEST MOTOR	0.185	0.046	(25%)	CONTINUOUS	4.8
MOTORS	0.44	0.44	(100%)	HEATING	4.5
				TOTAL LOAD	13.4
				BALANCED LOAD	55.8 A



**1 POWER PLAN**  
 1/4"=1'-0"

**LUMINAIRE SCHEDULE**

CALLOUT	SYMBOL	LAMP	DESCRIPTION	BALLAST	MOUNTING	MODEL	INPUT WATTS	VOLTS	LUMENS / LAMP
A	○	(1) 42W LED	1 X 4 LED WRAPAROUND FIXTURE		CEILING	COOPER LIGHTING SOLUTIONS - METALUX (FORMERLY EATON), 4WPLD4040C OR EQ	42	120V 1P 2W	4557
B	○	(1) MAX 2@13W MED BASE LED BULBS	ROUND CLOSE TO CEILING FIXTURE		CEILING	PROGRESS P550042-129 OR EQ.	60	120V 1P 2W	0
C	⊢	(1) 19.68W LED	2' LED STRIP LIGHT		CEILING	COOPER LIGHTING SOLUTIONS - METALUX (FORMERLY EATON), 2ST2L2040R OR EQ.	19.68	120V 1P 2W	2298
D	⊢	(1) 39.09W LED	4' LED STRIP LIGHT		CEILING	COOPER LIGHTING SOLUTIONS - METALUX (FORMERLY EATON), 4ST2L4040R OR EQ.	39.09	120V 1P 2W	4433
EMER-EXIT	⊗	(1)	COMBINATION EXIT/EMERGENCY UNIT W/DUAL SEALED-BEAM REMOTE HEADS	ELECTRONIC	CEILING	LITHONIA LHQM S W 1 R 120/277 ELA NX H0606 OR EQ.	3	120V 1P 2W	0

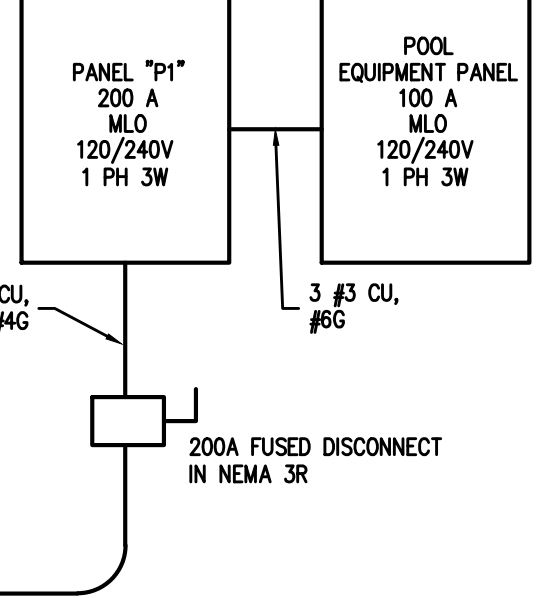


**2 LIGHTING PLAN**  
 1/4"=1'-0"

Ⓢ BRYANT (HUBBELL) MSD1000M OR EQUAL WALL SWITCH OCCUPANCY SENSOR DUAL (ULTRASONIC AND PASSIVE INFRARED) TECHNOLOGY 1,000 SQUARE FOOT COVERAGE 800W INCANDESCENT, 1000W FLUORESCENT AT 120V AC

AVAILABLE FAULT CALCULATIONS  
 1 150' RUN OF 3 #5/0 TO 250VIA TRANSFORMER 1.5X2  
 3,556A AT METER

AVAIL FAULT=3482A 10KA PANEL  
 AVAIL FAULT=3277A 10KA PANEL



**GROUNDING ELECTRODE DETAILS**

GROUNDING ELECTRODE CONDUCTORS SHALL BE #6 BARE COPPER. OTHER MATERIAL AND INSTALLATION PER NEC

- ① CONNECT TO METALIC WATER PIPE AS REQ'D.
- ② #6 COPPER GROUND PLACED TO BLDG STEEL
- ③ 3/4"x10' LONG COPPER CLAD GROUNDING ROD W/ COPPER GROUND.

A=#4 CU P1  
 A=#6 CU P2

**3 ELECTRIC RISER**  
 N.T.S.

**APPENDIX B 2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS**

**ELECTRICAL DESIGN**

**ELECTRICAL SYSTEM AND EQUIPMENT**

Method of Compliance:  
 Energy Code:  Prescriptive  Performance  
 ASHRAE 90.1:  Prescriptive  Performance

Lighting schedule (each fixture type)  
 lamp type required in fixture  
 number of lamps in fixture  
 ballast type used in the fixture  
 number of ballasts in fixture  
 total wattage per fixture  
 total interior wattage specified vs. allowed (whole building or space by space) 546/1788  
 total exterior wattage specified vs. allowed 0/500

- Additional Prescriptive Compliance
- 506.2.1 More Efficient HVAC Equipment
  - 506.2.2 Reduced Lighting Power Density
  - 506.2.3 Energy Recovery Ventilation Systems
  - 506.2.4 Higher Efficiency Service Water Heating
  - 506.2.5 On-Site Supply of Renewable Energy
  - 506.2.6 Automatic Daylighting Control Systems